0150
1023

OIPE

RAW SEQUENCE LISTING DATE: 10/19/2001
PATENT APPLICATION: US/09/878,131 TIME: 10:50:38

Input Set : A:\Leel13.app
Output Set: N:\CRF3\10192001\I878131.raw

<110> APPLICANT: FAN HONG, GUO
YANG, YONGJIE
ZHU, JIA
<120> TITLE OF INVENTION: LOW TEMPERATURE CYCLE EXTENSION OF DNA WITH HIGH
POLYMERIZATION SPECIFICITY
<130> FILE REFERENCE: LEE 113
<140> CURRENT APPLICATION NUMBER: 09/878,131
<141> CURRENT FILING DATE: 2001-06-08
<160> NUMBER OF SEQ ID NOS: 21
<170> SOFTWARE: PatentIn Ver. 2.1
<210> SEQ ID NO: 1
<211> LENGTH: 1764
<212> TYPE: DNA
<213> ORGANISM: Bacillus stearothermophilus
<400> SEQUENCE: 1

ENTERED

P.5

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<210> SEQ ID NO: 2
<211> LENGTH: 586

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PATENT APPLICATION: US/09/878,131 TIME: 10:50:38

Input Set : A:\Leel13.app
Output Set: N:\CRF3\10192001\I878131.raw

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60 <213> ORGANISM: Bacillus stearothermophilus
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69 Val Met Glu Glu Asn Tyr His Asp Ala Pro Ile Val Gly Ile Ala Leu
70          35                  40                  45
72 Val Asn Glu His Gly Arg Phe Phe Met Arg Pro Glu Thr Ala Leu Ala
73      50                  55                  60
75 Asp Ser Gln Phe Leu Ala Trp Leu Ala Asp Glu Thr Lys Lys Lys Ser
76  65                  70                  75                  80
78 Met Phe Asp Ala Lys Arg Ala Val Val Ala Leu Lys Trp Lys Gly Ile
79                  85                  90                  95
81 Glu Leu Arg Gly Val Ala Phe Asp Leu Leu Leu Ala Ala Tyr Leu Leu
82              100                 105                 110
84 Asn Pro Ala Gln Asp Ala Gly Asp Ile Ala Ala Val Ala Lys Met Lys
85          115                 120                 125
87 Gln Tyr Glu Ala Val Arg Ser Asp Glu Ala Val Tyr Gly Lys Gly Val
88      130                 135                 140
90 Lys Arg Ser Leu Pro Asp Glu Gln Thr Leu Ala Glu His Leu Val Arg
91 145                 150                 155                 160
93 Lys Ala Ala Ala Ile Trp Ala Leu Glu Gln Pro Phe Met Asp Asp Leu
94                  165                 170                 175
96 Arg Asn Asn Glu Gln Asp Gln Leu Leu Thr Lys Leu Glu His Ala Leu
97              180                 185                 190
99 Ala Ala Ile Leu Ala Glu Met Glu Phe Thr Gly Val Asn Val Asp Thr
100         195                 200                 205
102 Lys Arg Leu Glu Gln Met Gly Ser Glu Leu Ala Glu Gln Leu Arg Ala
103     210                 215                 220
105 Ile Glu Gln Arg Ile Tyr Glu Leu Ala Gly Gln Glu Phe Asn Ile Asn
106 225                 230                 235                 240
108 Ser Pro Lys Gln Leu Gly Val Ile Leu Phe Glu Lys Leu Gln Leu Pro
109                 245                 250                 255
111 Val Leu Lys Lys Thr Lys Thr Gly Tyr Ser Thr Ser Ala Asp Val Leu
112             260                 265                 270
114 Glu Lys Leu Ala Pro His His Glu Ile Val Glu Asn Ile Leu His Tyr
115         275                 280                 285
117 Arg Gln Leu Gly Lys Leu Gln Ser Thr Tyr Ile Glu Gly Leu Leu Lys
118     290                 295                 300
120 Val Val Arg Pro Asp Thr Lys Val His Thr Met Phe Asn Gln Ala Leu
121 305                 310                 315                 320
123 Thr Gln Thr Gly Arg Leu Ser Ser Ala Glu Pro Asn Leu Gln Asn Ile
124                 325                 330                 335
126 Pro Ile Arg Leu Glu Glu Gly Arg Lys Ile Arg Gln Ala Phe Val Pro
127             340                 345                 350
129 Ser Glu Pro Asp Trp Leu Ile Phe Ala Ala Asp Tyr Ser Gln Ile Glu
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RAW SEQUENCE LISTING DATE: 10/19/2001
PATENT APPLICATION: US/09/878,131 TIME: 10:50:38

Input Set : A:\Leel13.app
Output Set: N:\CRF3\10192001\I878131.raw

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138 Gln Leu Ser Glu Glu Glu Val Thr Ala Asn Met Arg Arg Gln Ala Lys
139                 405                 410                 415
141 Ala Val Asn Phe Gly Ile Val Tyr Gly Ile Ser Asp Tyr Gly Leu Ala
142             420                 425                 430
144 Gln Asn Leu Asn Ile Thr Arg Lys Glu Ala Ala Glu Phe Ile Glu Arg
145         435                 440                 445
147 Tyr Phe Ala Ser Phe Pro Gly Val Lys Gln Tyr Met Glu Asn Ile Val
148     450                 455                 460
150 Gln Glu Ala Lys Gln Lys Gly Tyr Val Thr Thr Leu Leu His Arg Arg
151 465                 470                 475                 480
153 Arg Tyr Leu Pro Asp Ile Thr Ser Arg Asn Phe Asn Val Arg Ser Phe
154                 485                 490                 495
156 Ala Glu Arg Thr Ala Met Asn Thr Pro Ile Gln Gly Ser Ala Ala Asp
157             500                 505                 510
159 Ile Ile Lys Lys Ala Met Ile Asp Leu Ala Ala Arg Leu Lys Glu Glu
160         515                 520                 525
162 Gln Leu Gln Ala Arg Leu Leu Leu Gln Val His Asp Glu Leu Ile Leu
163     530                 535                 540
165 Glu Ala Pro Lys Glu Glu Ile Glu Arg Leu Cys Glu Leu Val Pro Glu
166 545                 550                 555                 560
168 Val Met Glu Gln Ala Val Thr Leu Arg Val Pro Leu Lys Val Asp Tyr
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172             580                 585
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176 <211> LENGTH: 1764
177 <212> TYPE: DNA
178 <213> ORGANISM: Artificial Sequence
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181 <223> OTHER INFORMATION: Description of Artificial Sequence: Modified Bst
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187 gatgccccga ttgtcggaat cgcactagtg aacgagcatg ggcgattttt tatgcgcccg 180
188 gagaccgcgc tggctgattc gcaattttta gcatggcttg ccgatgaaac gaagaaaaaa 240
189 agcatgtttg acgccaagcg ggcagtcgtt gccttaaagt ggaaaggaat tgagcttcgc 300
190 ggcgtcgcct ttgatttatt gctcgctgcc tatttgctca atccggctca agatgccggc 360
191 gatatcgctg cggtggcgaa aatgaaacaa tatgaagcgg tgcggtcgga tgaagcggtc 420
192 tatggcaaag gcgtcaagcg gtcgctgccg gacgaacaga cgcttgctga gcatctcgtt 480
193 cgcaaagcgg cagccatttg ggcgcttgag cagccgttta tggacgattt gcggaacaac 540
194 gaacaagatc aattattaac gaagcttgag cacgcgctgg cggcgatttt ggctgaaatg 600
195 gaattcactg gggtgaacgt ggatacaaag cggcttgaac agatgggttc ggagctcgcc 660
196 gaacaactgc gtgccatcga gcagcgcatt tacgagctag ccggccaaga gttcaacatt 720
197 aactcaccaa aacagctcgg agtcatttta tttgaaaagc tgcagctacc ggtgctgaag 780
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RAW SEQUENCE LISTING DATE: 10/19/2001
PATENT APPLICATION: US/09/878,131 TIME: 10:50:38

Input Set : A:\Leel13.app
Output Set: N:\CRF3\10192001\I878131.raw

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199 gaaatcgtcg aaaacatttt gcattaccgc cagcttggca aactgcaatc aacgtatatt 900
200 gaaggattgt tgaaagttgt gcgccctgat accggcaaag tgcatacgat gttcaaccaa 960
201 gcgctgacgc aaactgggcg gctcagctcg gccgagccga acttgcaaaa cattccgatt 1020
202 cggaccccac tggggcggaa aatccgccaa gcgttcgtcc cgtcagagcc ggactggctc 1080
203 attttcgccg ccgattactc acaaattgaa ttgcgcgtcc tcgcccatat cgccgatgac 1140
204 gacaatctaa ttgaagcgtt ccaacgcgat ttggatattc acacaaaaac ggcgatggac 1200
205 attttccagt tgagcgaaga ggaagtcacg gccaacatgc gccgccaggc aaaggccgtt 1260
206 aactacggta tcgtttacgg aattagcgat tacggattgg cgcaaaactt gaacattacg 1320
207 cgcaaagaag ctgccgaatt tatcgaacgt tacttcgcca gctttccggg cgtaaagcag 1380
208 tatatggaaa acatagtgca agaagcgaaa cagaaaggat atgtgacaac gctgttgcat 1440
209 cggcgccgct atttgcctga tattacaagc cgcaatttca acgtccgcag ttttgcagag 1500
210 cggacggcca tgaacacgcc aattcaagga agcgccgctg acattattaa aaaagcgatg 1560
211 attgatttag cggcacggct gaaagaagag cagcttcagg ctcgtctttt gctgcaagtg 1620
212 catgacgagc tcattttgga agcgccaaaa gaggaaattg agcgattatg tgagcttgtt 1680
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223 <223> OTHER INFORMATION: Description of Artificial Sequence: Modified Bst
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233 Glu Val Met Glu Glu Asn Tyr His Asp Ala Pro Ile Val Gly Ile Ala
234 35 40 45
236 Leu Val Asn Glu His Gly Arg Phe Phe Met Arg Pro Glu Thr Ala Leu
237 50 55 60
239 Ala Asp Ser Gln Phe Leu Ala Trp Leu Ala Asp Glu Thr Lys Lys Lys
240 65 70 75 80
242 Ser Met Phe Asp Ala Lys Arg Ala Val Val Ala Leu Lys Trp Lys Gly
243 85 90 95
245 Ile Glu Leu Arg Gly Val Ala Phe Asp Leu Leu Leu Ala Ala Tyr Leu
246 100 105 110
248 Leu Asn Pro Ala Gln Asp Ala Gly Asp Ile Ala Ala Val Ala Lys Met
249 115 120 125
251 Lys Gln Tyr Glu Ala Val Arg Ser Asp Glu Ala Val Tyr Gly Lys Gly
252 130 135 140
254 Val Lys Arg Ser Leu Pro Asp Glu Gln Thr Leu Ala Glu His Leu Val
255 145 150 155 160
257 Arg Lys Ala Ala Ala Ile Trp Ala Leu Glu Gln Pro Phe Met Asp Asp
258 165 170 175
260 Leu Arg Asn Asn Glu Gln Asp Gln Leu Leu Thr Lys Leu Glu His Ala
261 180 185 190

RAW SEQUENCE LISTING DATE: 10/19/2001
PATENT APPLICATION: US/09/878,131 TIME: 10:50:38

Input Set : A:\Leel13.app
Output Set: N:\CRF3\10192001\I878131.raw

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263 Leu Ala Ala Ile Leu Ala Glu Met Glu Phe Thr Gly Val Asn Val Asp
264         195                 200                 205
266 Thr Lys Arg Leu Glu Gln Met Gly Ser Glu Leu Ala Glu Gln Leu Arg
267     210                 215                 220
269 Ala Ile Glu Gln Arg Ile Tyr Glu Leu Ala Gly Gln Glu Phe Asn Ile
270 225                 230                 235                 240
272 Asn Ser Pro Lys Gln Leu Gly Val Ile Leu Phe Glu Lys Leu Gln Leu
273                 245                 250                 255
275 Pro Val Leu Lys Lys Thr Lys Thr Gly Tyr Ser Thr Ser Ala Asp Val
276             260                 265                 270
278 Leu Glu Lys Leu Ala Pro His His Glu Ile Val Glu Asn Ile Leu His
279         275                 280                 285
281 Tyr Arg Gln Leu Gly Lys Leu Gln Ser Thr Tyr Ile Glu Gly Leu Leu
282     290                 295                 300
284 Lys Val Val Arg Pro Asp Thr Gly Lys Val His Thr Met Phe Asn Gln
285 305                 310                 315                 320
287 Ala Leu Thr Gln Thr Gly Arg Leu Ser Ser Ala Glu Pro Asn Leu Gln
288                 325                 330                 335
290 Asn Ile Pro Ile Arg Thr Pro Leu Gly Arg Lys Ile Arg Gln Ala Phe
291             340                 345                 350
293 Val Pro Ser Glu Pro Asp Trp Leu Ile Phe Ala Ala Asp Tyr Ser Gln
294         355                 360                 365
296 Ile Glu Leu Arg Val Leu Ala His Ile Ala Asp Asp Asp Asn Leu Ile
297     370                 375                 380
299 Glu Ala Phe Gln Arg Asp Leu Asp Ile His Thr Lys Thr Ala Met Asp
300 385                 390                 395                 400
302 Ile Phe Gln Leu Ser Glu Glu Glu Val Thr Ala Asn Met Arg Arg Gln
303                 405                 410                 415
305 Ala Lys Ala Val Asn Tyr Gly Ile Val Tyr Gly Ile Ser Asp Tyr Gly
306             420                 425                 430
308 Leu Ala Gln Asn Leu Asn Ile Thr Arg Lys Glu Ala Ala Glu Phe Ile
309         435                 440                 445
311 Glu Arg Tyr Phe Ala Ser Phe Pro Gly Val Lys Gln Tyr Met Glu Asn
312     450                 455                 460
314 Ile Val Gln Glu Ala Lys Gln Lys Gly Tyr Val Thr Thr Leu Leu His
315 465                 470                 475                 480
317 Arg Arg Arg Tyr Leu Pro Asp Ile Thr Ser Arg Asn Phe Asn Val Arg
318                 485                 490                 495
320 Ser Phe Ala Glu Arg Thr Ala Met Asn Thr Pro Ile Gln Gly Ser Ala
321             500                 505                 510
323 Ala Asp Ile Ile Lys Lys Ala Met Ile Asp Leu Ala Ala Arg Leu Lys
324         515                 520                 525
326 Glu Glu Gln Leu Gln Ala Arg Leu Leu Leu Gln Val His Asp Glu Leu
327     530                 535                 540
329 Ile Leu Glu Ala Pro Lys Glu Glu Ile Glu Arg Leu Cys Glu Leu Val
330 545                 550                 555                 560
332 Pro Glu Val Met Glu Gln Ala Val Thr Leu Arg Val Pro Leu Lys Val
333                 565                 570                 575
335 Asp Tyr His Tyr Gly Pro Thr Trp Tyr Asp Ala Lys
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Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

Use of n and / or Xaa has been detected in the Sequence Listing. Review the Sequence Listing to ensure a corresponding explanation is present in the <220> to <223> fields of each sequence using n or Xaa.

VERIFICATION SUMMARY DATE: 10/19/2001
PATENT APPLICATION: **US/09/878,131** TIME: 10:50:39

Input Set : **A:\Leel13.app**
Output Set: **N:\CRF3\10192001\I878131.raw**

L:554 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20